



By:  
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# Clinical diagnosis of systemic lupus erythematosus

# Introduction

➤ SLE covers a wide array of clinical manifestations.

➤ So, it requires:

Meticulous history.

Thorough physical examination.

Appropriate laboratory analysis.



➤ Is it lupus or not?

➤ If active or not?

➤ What about assessment of accumulated damage?

➤ What about the patient's health status?

# ACR Classification Criteria for SLE

➤ Published first in 1971, revised in 1982, recent modification in 1997.

1. Malar rash.
2. Discoid rash.
3. Photosensitivity.
4. Oral ulcers.
5. Arthritis.
6. Serositis.
7. Renal disorder.
8. Neurologic disorder.
9. Hematologic disorder.
10. Immunologic disorder.
11. Antinuclear antibodies.

> /= 4/11 criteria, serially or simultaneously = SLE

# 1. Malar rash

- Fixed erythema.
- Flat or raised.
- Over the malar eminences
- Sparing the nasolabial folds
- Biopsy .





# D.D. of malar rash



Dermatomyositis



Rosacea



Perioral dermatitis



Seborrheic dermatitis



Atopic dermatitis



Tinea faciei

## 2. Discoid rash

### PASTE

Plugged hair follicles.

Atrophy of Epidermis.

Scale.

Telangiectasis.

Erythema

Biopsy.





# Sites of discoid lupus



Localized



Localized



Generalized



Palmoplantar



Oral



DL of the lip

# D.D. of discoid lupus



Psoriasis



Psoriasis



Granuloma faciale



Sarcoidosis



Lichen planus



Lupus vulgaris



Squamous cell cancer



Keratoacanthoma



# 3. Photosensitivity

Skin rash due to reaction to sunlight.  
(by patient history or physician observation).



# D.D. of photosensitivity



Polymorphous light eruption



Actinic prurigo



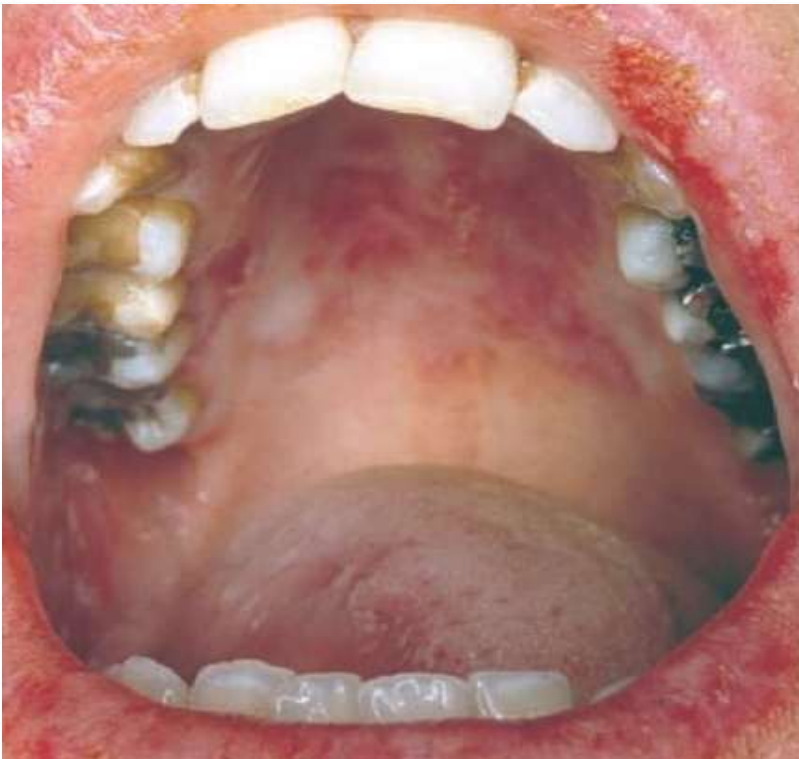
Porphyria



Urticaria

# 4. Oral ulcers

- Oral or nasopharyngeal ulceration.
- Usually painless.
- Observed by physician.





# D.D. of oral ulcers



Aphthous stomatitis



Behçet's disease



Intraoral herpes



Candidiasis



Leukoplakia

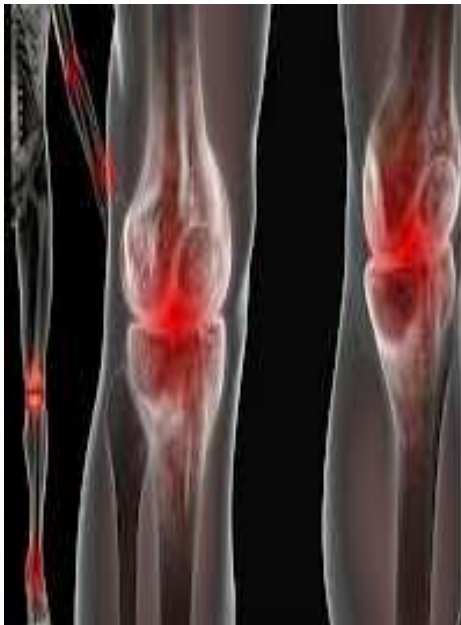


Malignancy



# 5. Arthritis

- o Nonerosive arthritis.
- o Affect 2 or more peripheral joints.
- o Characterized by swelling, tenderness, or effusion.

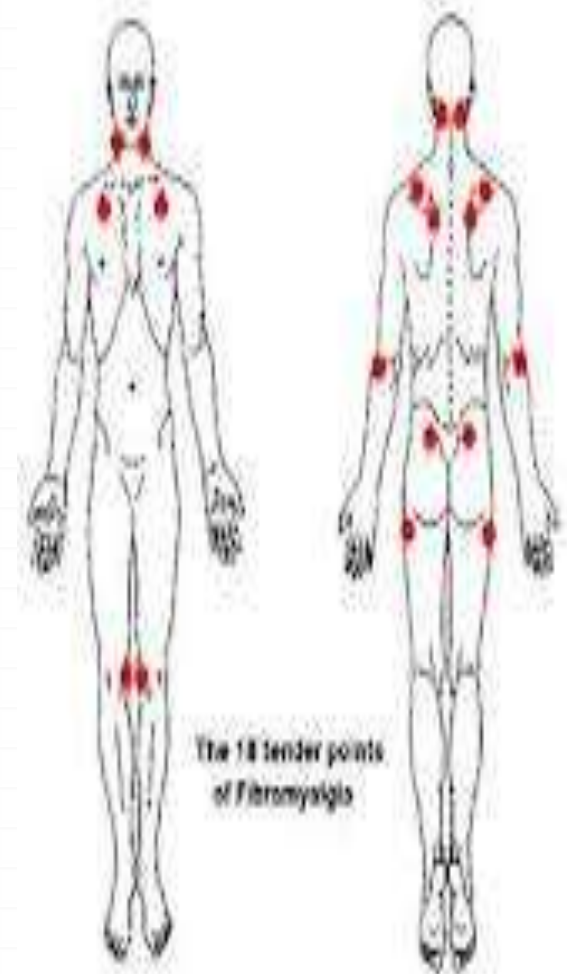




# D.D. of lupus arthritis



Rheumatoid arthritis



Fibromyalgia

# 6. Serositis

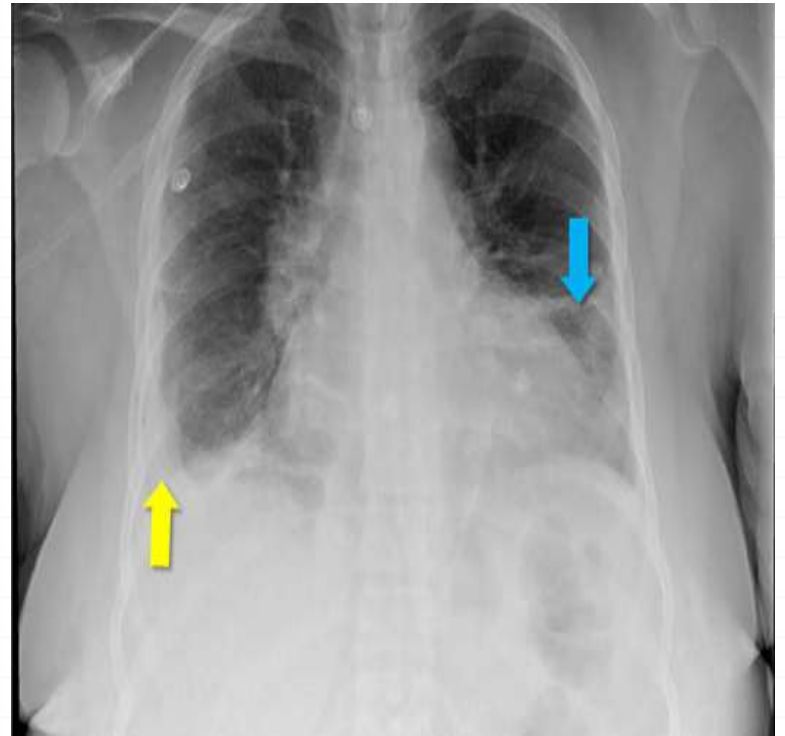
1. Pleuritis.
2. Pericarditis.

# Pleuritis

- ◊ History of pleuritic pain/
- ◊ Rub heard by physician/
- ◊ Evidence of pleural effusion.

## Pleural effusion is:

- ◊ Bilateral.
- ◊ Exudative.
- ◊ Normal glucose concentration.
- ◊ anti-nuclear antibodies (ANA)



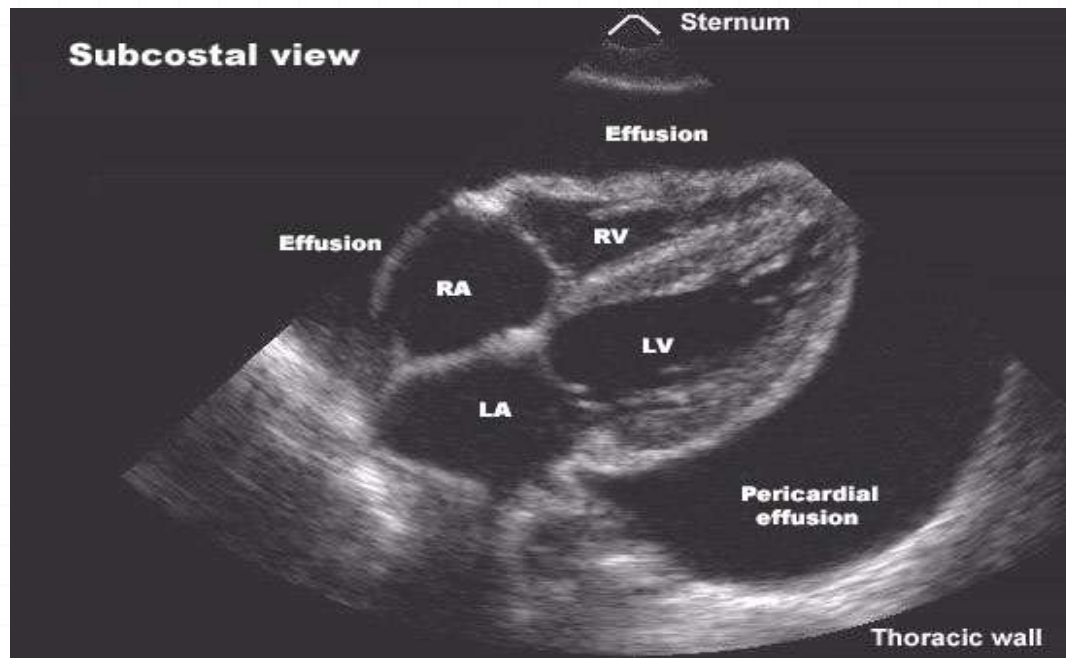
# D.D.

- ◊ Pneumonia.
- ◊ Acute pulmonary embolus.
- ◊ Drug-induced lupus.
- ◊ Inflammatory bowel disease.
- ◊ Familial Mediterranean fever .
- ◊ Radiation pneumonitis.
- ◊ Uraemia
- ◊ Volume overload.



# Pericarditis

- Documented by electrocardiography.
- Rub heard by physician.
- Or evidence of pericardial effusion.



# D.D.

o Idiopathic .

o Infections.

o Radiation.

o Neoplasm.

o Dressler's syndrome.

o Myocarditis.

o Trauma.

o Rheumatic diseases.

o Drugs .

o Metabolic.

# 7. Renal disorder

- Persistent proteinuria:  
    > 500 mg / 24 hours.  
    or > 3+ .



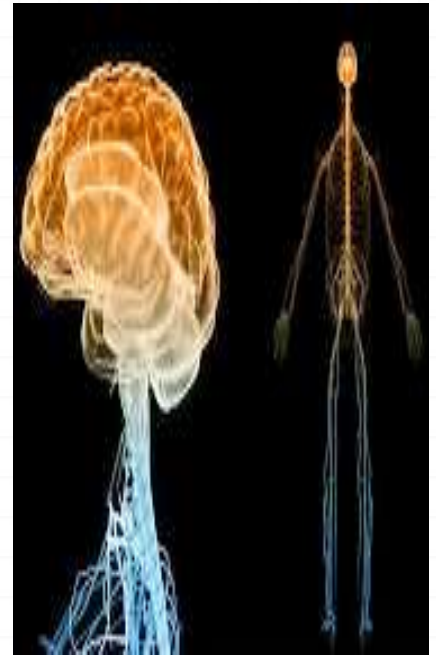
- Cellular casts :  
    RBCs/Hemoglobin  
    Granular/Tubular/Mixed cellular casts.

# 8. Neurologic disorder

➤ Seizures.

➤ Psychosis .

Exclude : drugs , infection , uremia,  
hypertensive emergency, ketoacidosis,  
electrolyte imbalance.



# 9. Hematologic disorder

- Hemolytic anemia with reticulocytosis.
- Or leukopenia  $< 4,000 / \text{mm}^3$  on **two** or more occasions.
- Or lymphopenia  $< 1,500 / \text{mm}^3$  on **two** or more occasions.
- Or thrombocytopenia  $< 100 \times 1000 / \text{mm}^3$ .

## Exclude:

Drugs

Infection.

Malignancy.



# 10 . Immunologic disorder

- Anti-dsDNA in abnormal titer.
- Anti-sm antibody.
- Positive finding of antiphospholipid antibody:

IgG or IgM anticardiolipin antibodies.

Lupus anticoagulant .

False-positive serologic test for syphilis.

(positive for at least 6 months and confirmed by negative *Treponema pallidum* immobilization  
or fluorescent treponemal antibody absorption test)



# 11. Antinuclear antibodies

- An abnormal titer .
- In the absence of drugs associated with drug-induced lupus:

Procainamide.

Hydralazine.

Minocycline.

Anti-TNF agents.

# ACR Classification Criteria for SLE

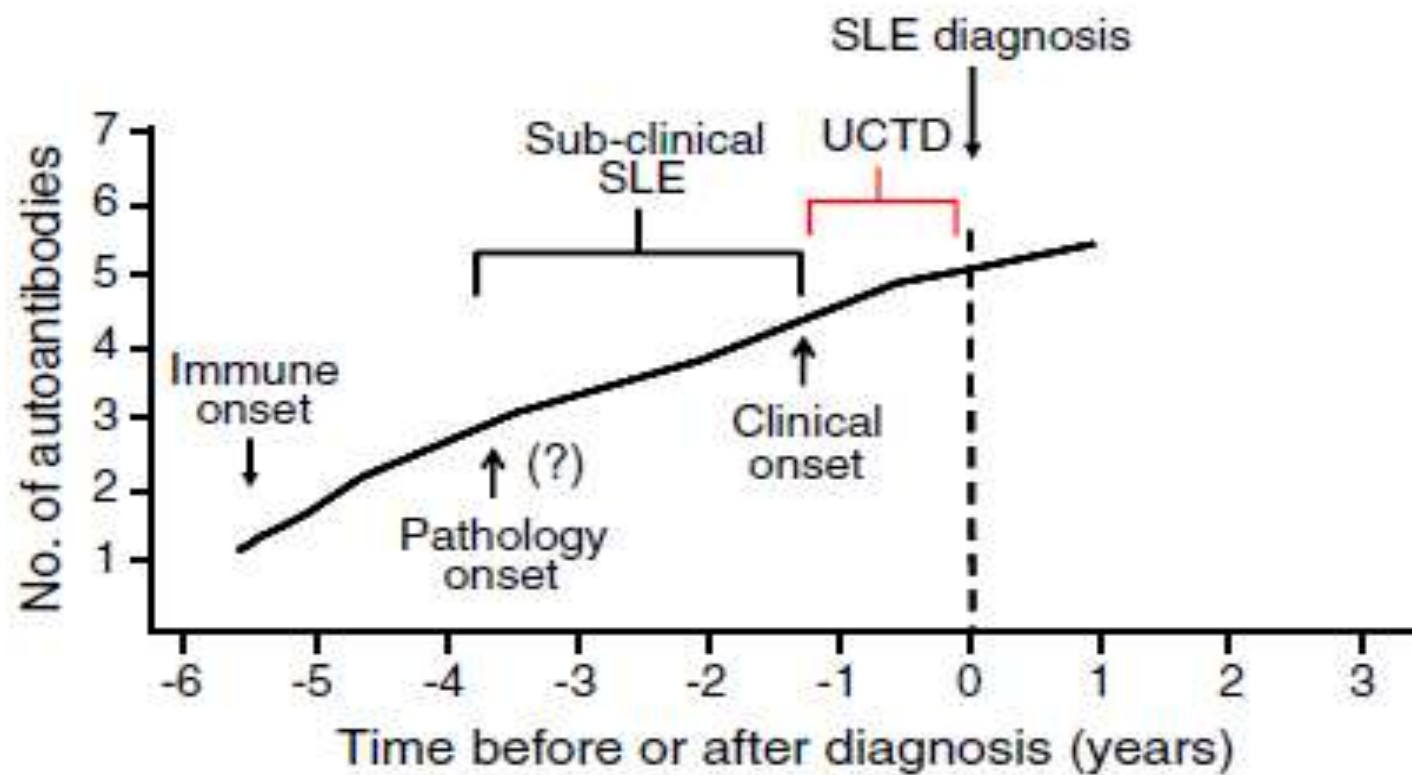
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# The classification criteria are not perfect:

- Over-represent cutaneous manifestations .
- Lack sensitivity for detection of early disease.
- Not capture patients with lupus nephritis and neurologic lupus.
- Hypocomplementemia is absent .
- The original intent of was for research purposes, not for diagnosis in clinical practice.
- Not valid for incident SLE.



**Fig. 2.** Early steps in the development of SLE. After a variable period of time from autoantibody appearance, immune deposits can be found in tissue where they can potentially initiate an inflammatory process. The development of immune deposits can be considered as the pathology onset of lupus and all immune histopathological changes occurring between pathology and clinical onset can be defined as “subclinical SLE”, whereas all clinical and immunological abnormalities occurring between clinical onset and diagnosis represents what is known as undifferentiated connective tissue disease.

# SLICC Classification Criteria for SLE

**Arthritis & RheumatismAccepted Articles,**  
**Accepted manuscript online: 2 MAY 2012**

## Derivation and Validation of Systemic Lupus International Collaborating Clinics Classification Criteria for Systemic Lupus Erythematosus

Michelle Petri<sup>1</sup>, Ana-Maria Orbai<sup>1</sup>, Graciela S. Alarcón<sup>2</sup>, Caroline Gordon<sup>3</sup>, Joan T. Merrill<sup>4</sup>, Paul R. Fortin<sup>5</sup>, Ian N. Bruce<sup>6</sup>, David Isenberg<sup>7</sup>, Daniel J. Wallace<sup>8</sup>, Ola Nived<sup>9</sup>, Gunnar Sturfelt<sup>9</sup>, Rosalind Ramsey-Goldman<sup>10</sup>, Sang-Cheol Bae<sup>11</sup>, John G. Hanly<sup>12</sup>, Jorge Sanchez-Guerrero<sup>13</sup>, Ann Clarke<sup>14</sup>, Cynthia Aranow<sup>15</sup>, Susan Manzi<sup>16</sup>, Murray Urowitz<sup>17</sup>, Dafna Gladman<sup>17</sup>, Kenneth Kalunian<sup>18</sup>, Melissa Costner<sup>19</sup>, Victoria P. Werth<sup>20</sup>, Asad Zoma<sup>21</sup>, Sasha Bernatsky<sup>14</sup>, Guillermo Ruiz-Irastorza<sup>22</sup>, Munther A. Khamashta<sup>23</sup>, Soren Jacobsen<sup>24</sup>, Jill P. Buyon<sup>25</sup>, Peter Maddison<sup>26</sup>, Mary Anne Dooley<sup>27</sup>, Ronald F. van Vollenhoven<sup>28</sup>, Ellen Ginzler<sup>29</sup>, Thomas Stoll<sup>30</sup>, Christine Peschken<sup>31</sup>, Joseph L. Jorizzo<sup>32</sup>, Jeffrey P. Callen<sup>33</sup>, S. Sam Lim<sup>34</sup>, Barri J. Fessler<sup>35</sup>, Murat Inanc<sup>36</sup>, Diane L. Kamen<sup>37</sup>, Anisur Rahman<sup>7</sup>, Kristjan Steinsson<sup>38</sup>, Andrew G. Franks Jr.<sup>39</sup>, Lisa Sigler<sup>1</sup>, Suhail Hameed<sup>1</sup>, Hong Fang<sup>1</sup>, Ngoc Pham<sup>1</sup>, Robin Brey<sup>40</sup>, Michael H. Weisman<sup>41</sup>, Gerald McGwin Jr.<sup>42</sup>, Laurence S. Magder<sup>43</sup>

# Classify a patient as having SLE if:

- Satisfies 4 criteria

(at least 1 clinical criterion + 1 immunologic criterion).

OR

- The patient has biopsy-proven nephritis compatible with SLE + ANA / anti-dsDNA.



# SLICC Classification Criteria for SLE

## Clinical Criteria

1. Acute cutaneous lupus /  
subacute cutaneous lupus

2. Chronic cutaneous lupus.

3. Oral ulcers.

4. Nonscarring alopecia.

5. Synovitis.

6. Serositis.

7. Renal:

Urine protein/creatinine **OR**

24 hr urine protein (500 mg /24 hr .

Red blood cell casts

8. Neurologic:

Seizures/psychosis/myelitis.

Mononeuritis multiplex

Peripheral/ Cranial neuropathy.

Acute confusional state .

9. Hemolytic anemia.

10. Leukopenia ( $< 4000/\text{mm}^3$  once)

**OR**

Lymphopenia ( $< 1000/\text{mm}^3$  once)

11. Thrombocytopenia

( $< 100,000/\text{mm}^3$ ) once

# Immunological Criteria

1. ANA.
  2. Anti-dsDNA .
  3. Anti-Sm.
  4. Antiphospholipid antibody: any of the following :
    - Lupus anticoagulant
    - False-positive RPR
    - Medium or high titer anticardiolipin (IgA, IgG or IgM).
    - Anti- $\beta$ 2 glycoprotein I (IgA, IgG or IgM).
  5. Low complement: C3/ C4/ CH50
  6. Direct Coombs test *in the absence of hemolytic anemia.*
- Criteria are cumulative and need not be present concurrently.

## Performance of the proposed classification, compared to the current ACR criteria based on 702 cases.

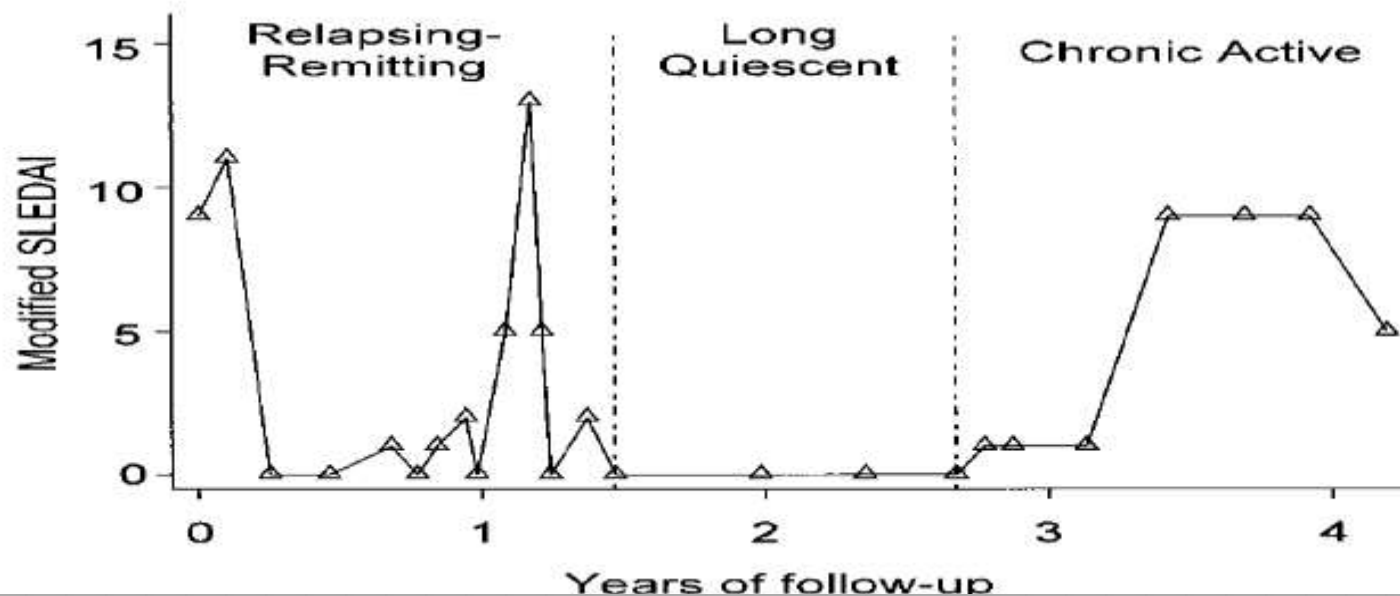
Rule	Sensitivity	Specificity	Misclassified Cases
1997 ACR Criteria	267/310 (86%)	365/392 (93%)	70
SLICC Criteria	292/310 (94%)	361/392 (92%)	49

If active or not?

# Disease activity

- Increasing signs and symptoms.
- Changes in serology.
- Absence of improvement that lead to increase therapy.

## Patterns of disease activity





# *Standardized measures of disease activity*

- ❑ Physicians Global Assessment (PGA).
- ❑ SLE Disease Activity Index (SLEDAI).
- ❑ British Isles Lupus Assessment Group (BILAG).
- ❑ Systemic Lupus Activity Measure (SLAM).
- ❑ Lupus Activity Index (LAI).
- ❑ European Consensus Lupus Activity Measurement (ECLAM).

# SLE Disease Activity Index (SLEDAI)

Check box: If descriptor is present at the time of visit or in the proceeding 10 days

Wt	Present	Descriptor	Definition
8	<input type="checkbox"/>	Seizure	Recent onset. Exclude metabolic, infectious or drug cause
8	<input type="checkbox"/>	Psychosis	Altered ability to function in normal activity due to severe disturbance in the perception of reality. Include hallucinations, incoherence, marked loose associations, impoverished thought content, marked illogical thinking, bizarre, disorganized, or catatonic behavior. Excluded uremia and drug causes.
8	<input type="checkbox"/>	Organic Brain Syndrome	Altered mental function with impaired orientation, memory or other intelligent function, with rapid onset fluctuating clinical features. Include clouding of consciousness with reduced capacity to focus, and inability to sustain attention to environment, plus at least two of the following: perceptual disturbance, incoherent speech, insomnia or daytime drowsiness, or increased or decreased psychomotor activity. Exclude metabolic, infectious or drug causes.
8	<input type="checkbox"/>	Visual Disturbance	Retinal changes of SLE. Include cytoid bodies, retinal hemorrhages, serious exudate or hemorrhages in the choroids, or optic neuritis. Exclude hypertension, infection, or drug causes.
8	<input type="checkbox"/>	Cranial Nerve Disorder	New onset of sensory or motor neuropathy involving cranial nerves.
8	<input type="checkbox"/>	Lupus Headache	Severe persistent headache: may be migrainous, but must be non-responsive to narcotic analgesia.
8	<input type="checkbox"/>	CVA	New onset of cerebrovascular accident(s). Exclude arteriosclerosis
8	<input type="checkbox"/>	Vasculitis	Ulceration, gangrene, tender finger nodules, periungual, infarction, splinter hemorrhages, or biopsy or angiogram proof of vasculitis
4	<input type="checkbox"/>	Arthritis	More than 2 joints with pain and signs of inflammation (i.e. tenderness, swelling, or effusion).
4	<input type="checkbox"/>	Myositis	Proximal muscle aching/weakness, associated with elevated creatine phosphokinase/adolase or electromyogram changes or a biopsy showing myositis.

# SLE Disease Activity Index (SLEDAI)

4	<input type="checkbox"/>	Urinary Casts	Heme-granular or red blood cell casts
4	<input type="checkbox"/>	Hematuria	>5 red blood cells/high power field. Exclude stone, infection or other cause.
4	<input type="checkbox"/>	Proteinuria	>0.5 gm/24 hours. New onset or recent increase of more than 0.5 gm/24 hours.
4	<input type="checkbox"/>	Pyuria	>5 white blood cells/high power field. Exclude infection.
2	<input type="checkbox"/>	New Rash	New onset or recurrence of inflammatory type rash.
2	<input type="checkbox"/>	Alopecia	New onset or recurrence of abnormal, patchy or diffuse loss of hair.
2	<input type="checkbox"/>	Mucosal Ulcers	New onset or recurrence of oral or nasal ulcerations
2	<input type="checkbox"/>	Pleurisy	Pleuritic chest pain with pleural rub or effusion, or pleural thickening.
2	<input type="checkbox"/>	Pericarditis	Pericardial pain with at least 1 of the following: rub, effusion, or electrocardiogram confirmation.
2	<input type="checkbox"/>	Low Complement	Decrease in CH50, C3, or C4 below the lower limit of normal for testing laboratory.
2	<input type="checkbox"/>	Increased DNA binding	>25% binding by Farr assay or above normal range for testing laboratory.
1	<input type="checkbox"/>	Fever	>38°C. Exclude infectious cause
1	<input type="checkbox"/>	Thrombocytopenia	<100,000 platelets/mm <sup>3</sup>
1	<input type="checkbox"/>	Leukopenia	<3,000 White blood cell/mm <sup>3</sup> . Exclude drug causes.

\_\_\_\_\_ TOTAL SCORE (Sum of weights next to descriptors marked present)

# Seizure (8)

Recent onset.

Exclude :

Metabolic.

Infectious.

Drug cause.



# Psychosis (8)

○ Altered ability to function in normal activity due to :

Hallucinations.

Incoherence.

Marked loose associations.

Impoverished thought content.

Bizarre, disorganized behavior.

○ Excluded uremia and drug causes.





# Organic Brain Syndrome (8)

- o Altered mental function :

  - Orientation.

  - Memory .

  - Intelligent function.

- o Fluctuating clinical features:

  - Clouding of consciousness

  - Incoherent speech.

  - Insomnia .

  - Daytime drowsiness.

  - Increased or decreased psychomotor activity.

- o Exclude metabolic, infectious or drug causes.

# Visual Disturbance (8)

## o Retinal changes of SLE:

Cytoid bodies.

Retinal hemorrhages.

Serious exudate .

Hemorrhages in the choroids.

Optic neuritis.

## o Exclude:

Hypertension.

Infection.

Drug causes.



# Cranial Nerve Disorder (8)

- New onset.
- Sensory or motor neuropathy.
- Cranial nerves.

# Lupus Headache (8)

- ◊ Severe persistent headache.
- ◊ May be migrainous.
- ◊ Must be nonresponsive to narcotic analgesia.



# Cerebrovascular accident(s) (8)

- New onset .
- Exclude arteriosclerosis.





# Vasculitis (8)



Tender finger nodules



Splinter hemorrhages



Periungual infarction



Ulceration



Gangrene

or biopsy or angiogram proof of vasculitis

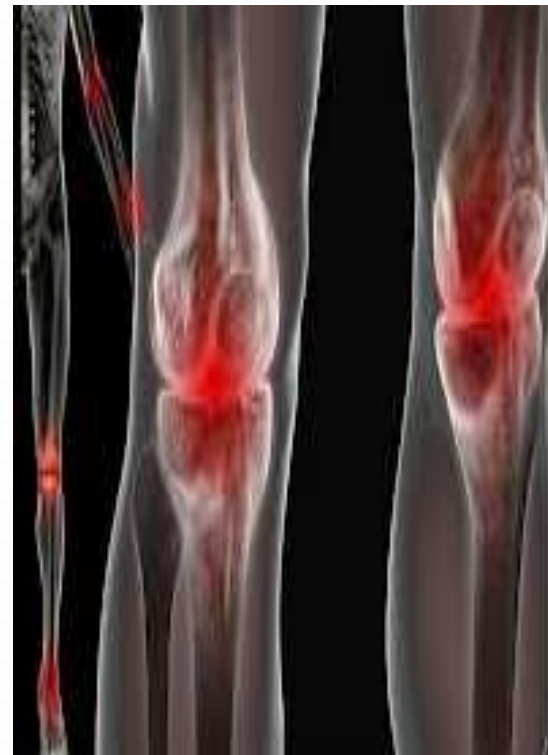
# Arthritis (4)

- More than 2 joints.
- With pain.
- Signs of inflammation :

Tenderness.

Swelling.

Effusion.



# Myositis (4)



Proximal muscle  
aching/weakness



Electromyogram changes



Biopsy showing myositis

Elevated creatine phosphokinase/adolase.

### ❑ *Urinary Casts (4):*

Heme-granular /

RBC casts.

### ❑ *Hematuria (4):*

>5 RBCs/high power field.

### ➤ Exclude:

Stone.

Infection.

other cause.

### ❑ *Proteinuria (4):*

>0.5 gm/24 hours.

New onset / recent increase  
of > 0.5 gm/24 hours.

### ❑ *Pyuria (4):*

>5 WBCs/ high power field.

Exclude infection.



o **New Rash (2)**: new onset / recurrence of inflammatory type.

o **Alopecia (2)**: New onset / recurrence of loss of hair

Patchy



Diffuse

o **Mucosal Ulcers (2)**:

New onset / recurrence of oral/nasal.





## ***Pleurisy (2):***

Pleuritic chest pain

+

Pleural rub /

Effusion/

Pleural thickening.

## ***Pericarditis (2):***

Pericardial pain

+

Rub/

Effusion/

ECG changes.

*o Low Complement (2):* ↓CH50, C3, or C4.

*o Increased DNA binding (2)*

*o Fever (1) :* >38°C, Exclude infection.

*o Thrombocytopenia (1):* <100,000/mm<sup>3</sup>.

*o Leukopenia (1):* <3,000/mm<sup>3</sup>, Exclude drug causes.

### Mild or Moderate Flare

Change in SLEDAI > 3 points

New/worse:

Discoid/Photosensitive  
Profundus/cutaneous  
vasculitis

Bullous Lupus/Ulcers

Pleuritis/Pericarditis

Arthritis

Fever (SLE)

↑Prednisone, not to >0.5  
mg/kg/day

Added NSAID / Plaquenil

### Severe Flare

Change in SLEDAI > 12

New/worse :

CNS-SLE/Vasculitis

Nephritis/Myositis

Plt < 60.000

Anemia: Hb <7%

↓ in Hb >3%

Prednisone >0.5 mg/kg/day.

New Cytoxan/Azathioprine/  
Methotrexate/Hospitalization  
(SLE)

What about assessment of accumulated damage?

# Damage

- ◊ Nonreversible change.
- ◊ Not related to active inflammation.
- ◊ Occurring since onset of lupus.
- ◊ Ascertained by clinical assessment.
- ◊ Present for at least **6 months** .
- ◊ Score:
  - 12 systems (detect damage regardless of its origin by SLE/Drugs/Cancer/ Diabetes).
  - Can only increase with time.
  - Scores rarely reach 12.

**System Lupus International Collaborating Clinics/American College of Rheumatology  
Damage Index for Systemic Lupus Erythematosus\***

Item	Score
<b><i>Ocular</i></b> (either eye, by clinical assessment)	
Any cataract ever	1
Retinal change or optic atrophy	1
<b><i>Neuropsychiatric</i></b>	
Cognitive impairment (e.g. memory deficit, difficulty with calculation, poor concentration, difficulty in spoken or written language, impaired performance levels) or major psychosis	1
Seizures requiring therapy for 6 months	1
Cerebrovascular accident ever (score 2 > 1)	1 (2)
Cranial or peripheral neuropathy (excluding optic)	1
Transverse myelitis	1
<b><i>Renal</i></b>	
Estimated or measured glomerular filtration rate < 50%	1
Proteinuria $\geq 3.5$ gm/24hours	1
Or	
End-stage renal disease (regardless of dialysis or transplantation)	3
<b><i>Pulmonary</i></b>	
Pulmonary hypertension (right ventricular prominence, or loud P2)	1
Pulmonary fibrosis (physical and radiograph)	1
Shrinking lung (radiograph)	1
Pleural fibrosis (radiograph)	1
Pulmonary infarction (radiograph)	1
<b><i>Cardiovascular</i></b>	
Angina or coronary artery bypass	1
Myocardial infarction ever (score 2 if > 1)	1(2)
Cardiomyopathy (ventricular dysfunction)	1
Valvular disease (diastolic murmur, or systolic murmur > 3/6)	1
Pericarditis for 6 months, or pericardiectomy	1



### *Peripheral vascular*

Claudication for 6 months	1
Minor tissue loss (pulp space)	1
Significant tissue loss ever (e.g. loss of digit or limb)(score 2 if > 1 site)	1(2)
Venous thrombosis with swelling, ulceration, or venous stasis	1

### *Gastrointestinal*

Infarction or resection of bowel below duodenum spleen, liver, or gall bladder ever, for cause any (score 2 if > 1 site)	1(2)
Mesenteric insufficiency	1
Chronic peritonitis	1
Stricture or upper gastrointestinal tract surgery ever	1

### *Musculoskeletal*

Muscle atrophy or weakness	1
Deforming or erosive arthritis (including reducible deformities, excluding avascular necrosis)	1
Osteoporosis with fracture or vertebral collapse (excluding avascular necrosis)	1
Avascular necrosis (score 2 if > 1)	1(2)
Osteomyelitis	1

### *Skin*

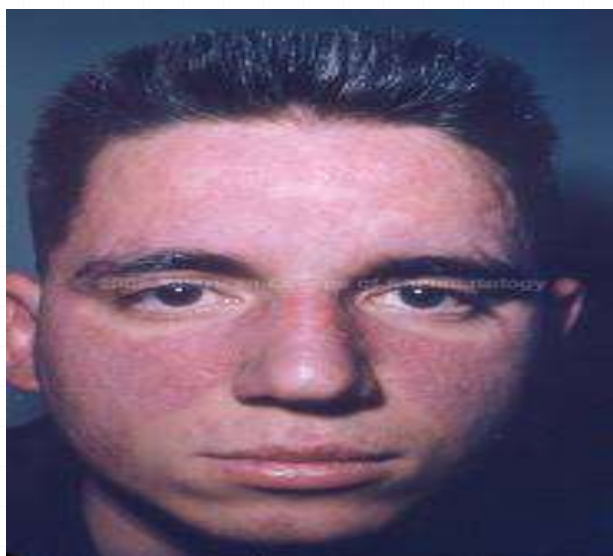
Scarring chronic alopecia	1
Extensive scarring or panniculum other than scalp and pulp space	1
Skin ulceration (excluding thrombosis) for > 6 months	1

Premature gonadal failure	1
Diabetes (regardless of treatment)	1
Malignancy (exclude dysplasia) (score 2 if > 1 site)	1(2)

Assessing the health status of SLE patients?

# The Short-Form-36 (SF-36)

- Patient's own perception of health and quality of life.
- Assesses 8 health concepts:
  1. Limitations in **physical** activities .
  2. Limitations in **social** activities .
  3. Limitations in **usual role** activities due to **physical** health problems.
  4. Bodily **pain**.
  5. General **mental** health.
  6. Limitations in **usual role** activities due to **emotional** problems.
  7. **Vitality** (energy and fatigue).
  8. **General** health perceptions.



Thank  
You

